

AMENDMENTS TO CLAIMS

Please cancel claims 1-13 and 15-20.

21. (Currently Amended) A method for recovering nylon from a nylon-containing material, comprising:

contacting the nylon-containing material with an alkanol-containing solvent at an elevated temperature between about 130 °C and about 155 °C and at a pressure higher than the an equilibrium vapor pressure of the alkanol-containing solvent at the elevated temperature, and between about 250 psig to about 600 psig, for a dissolution time less than 45 minutes and sufficient to dissolve the desired yield of nylon, thereby dissolving the nylon in the alkanol-containing solvent, wherein the combination of the pressure, temperature and the dissolution time provide a desired yield of nylon;

removing the alkanol-containing solvent containing dissolved nylon from any undissolved solids; and

decreasing the temperature of the alkanol-containing solvent containing dissolved nylon to between 120 °C and 130 °C to precipitate the dissolved nylon to generate precipitated nylon in remaining solution; and
separating the precipitated nylon from the remaining solution.

22. (New) The method of claim 21, wherein the nylon-containing material comprises a floor covering material.

23. (New) The method of claim 21, wherein the nylon is nylon 6,6.

24. (New) The method of claim 21, wherein the alkanol-containing solvent is substantially free of glycols or other polyols.
25. (New) The method of claim 21, wherein the alkanol-containing solvent comprises an alkanol selected from the group consisting of methanol, ethanol, propanols, butanols, and mixtures thereof.
26. (New) The method of claim 21, wherein the alkanol-containing solvent comprises a mixture of alkanol and water.
27. (New) The method of claim 26, wherein the alkanol is present in an amount ranging from about 40 wt% to about 90 wt% of the solvent.
28. (New) The method of claim 27, wherein the alkanol-containing solvent comprises a mixture of about 80 wt% ethanol in water.
29. (New) The method of claim 21, wherein the pressure during the contacting ranges from 250 psig to 400 psig.
30. (New) The method of claim 29, wherein the elevated temperature is about 145 °C.

31. (New) The method of claim 21, wherein the pressure higher than the equilibrium vapor pressure of the alkanol-containing solvent at the elevated temperature is attained by introducing an inert gas into the reactor.
32. (New) The method of claim 21, wherein the pressure higher than the equilibrium vapor pressure of the alkanol-containing solvent at the elevated temperature results at least in part from the pressure head of the alkanol-containing solvent entering the reactor.
33. (New) The method of claim 21, wherein the nylon-containing waste material comprises nylon-containing floor covering materials which comprise carpet or carpet tile, or mixtures thereof.
34. (New) The method of claim 33, wherein the carpet or carpet tile contains nylon 6,6.
35. (New) The method of claim 21, wherein the dissolution time is between 15 and 45 minutes.
36. (New) The method of claim 35, wherein the dissolution time is between 15 and 37 minutes.

37. (New) The method of claim 36, wherein the dissolution time is between 15 and 23 minutes.
38. (New) The method of claim 21 wherein the temperature, the pressure and the dissolution time result in a yield of 80-100%.